UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
BIN C15700
Seattle, WA 98115-0070

February 20, 2002

Michael Kulbacki
Federal Highway Administration
Evergreen Plaza Building
711 S. Capitol Way
Olympia, Washington 98501

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation for Whitman Bridge Replacement (NMFS No. WSB-01-003).

Dear Mr. Kulbacki:

The attached document transmits the National Marine Fisheries Service's (NMFS) Biological Opinion (BO) on the proposed Whitman Bridge Replacement in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The Federal Highway Administration (FHWA) had determined that the proposed actions are likely to adversely affect the Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) Evolutionary Significant Units (ESU). Formal consultation was initiated on August 8, 2001.

This BO reflects formal consultation and an analysis of effects covering the MCR steelhead in Walla Walla, Walla Walla County, Washington. This BO is based on information provided in the Biological Assessment sent to NMFS by the FHWA and additional information transmitted via telephone conversations, mail, and e-mail with the project applicant. A complete administrative record of this consultation is on the file at the Washington State Branch Office.

The NMFS concluded that the proposed action is not likely to jeopardize the continued existence MCR steelhead, or destroy or adversely modify designated critical habitat. As required by Section 7 of the ESA, NMFS has included reasonable and prudent measures with nondiscretionary terms and conditions that NMFS believes are necessary to minimize the impact of incidental take associated with this action.

This Opinion also serves as consultation on Essential Fish Habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600.

If you have any questions regarding this consultation, please contact Joel Moribe of the Washington Habitat Branch Office at (206) 526-4359.

Sincerely,

for Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: David Eids, Walla Walla County
Brian Hasselbach, WSDOT
Roger Arms, WSDOT
Paul Wagner, WSDOT

Endangered Species Act-Section 7

BIOLOGICAL OPINION

and
Magnuson-Stevens Fishery Conservation and Management Act Consultation

Whitman Bridge Replacement (NMFS WSB 01-003)

Agency:	Federal Highway Administration
Consultation Conducted By:	National Marine Fisheries Service Northwest Region Washington State Habitat Branch

Approved: for Michael R Crouse
D. Robert Lohn
Regional Administrator

Date: 02/21/2002

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1. INTRODUCTION

This document transmits the National Marine Fisheries Service's (NMFS) Biological Opinion (BO) and Essential Fish Habitat consultation based on our review of a project to replace the Whitman Bridge in Walla Walla County, Washington. Whitman Bridge crosses the Walla Walla River, a tributary to the Columbia River and is located in the Mid-Columbia River (MCR) evolutionary significant unit (ESU). The Walla Walla River is also essential fish habitat for chinook salmon.

1.1. Background Information

The Federal Highway Administration (FHWA) concluded that the project proposed by the lead agency (Walla Walla County Public Works Department) were likely to adversely affect MCR steelhead trout (*Oncorhynchus mykiss*) and their designated critical habitats. The existing bridge is dilapidated and sub-standard for existing traffic and water flow conditions. The proposed replacement will upgrade the bridge to county highway standards and structural capacity.

1.2. Consultation History

The document is based on information provided in the Biological Assessment (BA) and the following written correspondence: On January 5, 2001, the NMFS received a BA (dated January 4, 2001) from the Washington State Department of Transportation (WSDOT). On May 2, 2001, NMFS sent a letter to WSDOT informing them that we did not concur with their "may affect, not likely to adversely affect" effect determination and requested additional information from the FHWA related to the proposed project. On June 11, 2001, the NMFS met with WSDOT and their consultant to discuss our May 2, 2001 information request. On August 8, 2001, the FHWA sent NMFS requested initiation of formal section 7 consultation. On August 17, 2001, the NMFS sent an e-mail to WSDOT informing them that all information requested in the May 2, 2001 letter had not yet been received. On September 20, 2001, the NMFS received additional information regarding bridge removal and demolition, channel modification, culvert sizing, and a copy of an HPA for a similar bridge replacement project. Information necessary to conduct formal consultation was assembled by September 28, 2001.

Additionally, numerous telephone conversations and e-mail correspondence between NMFS staff, WDFW, Walla Walla County, Adolfson Associates, Inc., WSDOT and FHWA is included in the administrative record.

1.3. Description of Proposed Action

The FHWA proposes to fund, in whole or in part, a series of construction projects to be constructed by Walla Walla County. The Walla Walla County Public Works Department proposes to replace the Whitman Bridge which is the Detour Road overcrossing of Walla Walla River in Walla Walla County, Washington. The existing bridge will be demolished and rebuilt with a two-span concrete bridge in the same location as the existing bridge.

1.3.1. Diversion of River and Removal of Fish

It is necessary to divert water to bypass the project area during removal and construction of the bridge. The diversion will be accomplished by directing aboveground flow in the streambed through one or more culverts. Gravel bag revetments, ecology blocks, jersey barriers, and other similar objects will be installed upstream of the bridge to create the temporary diversion. The entire stream flow will be diverted into the culvert(s) where it will bypass the project area. A similar revetment will be placed on the downstream end of the project to prevent backwater into the project area. All culverts will be sized appropriately to ensure passable flows for juveniles and adults. The total length of streambed that will be diverted and dewatered will be approximately 165 feet (Adolfson Assoc. 2000a). The total area that will be dewatered will be approximately 8,250 square feet and the work area will affect about 19,795 square feet of the stream channel. The project area will be dewatered for up to 108 days between July 15 - October 31. All salmonids in the dewatered area would be captured and transported to free-flowing water. Capture and transport of salmonids would begin immediately after the installation of the upstream revetment and last until all salmonids are removed.

1.3.2. Construction and Removal of Temporary Work Platform

After the culvert and revetments are in place, and all salmonids have been removed, the project area will be filled to construct a work platform. The fill used to create this work platform will be gravels excavated from the downstream channel modification area on the South bank and some clean gravel from an approved off-site source. After construction of the bridge is complete, the fill will be removed and the stream bed will be regraded to its pre-construction condition.

1.3.3. Demolition of Existing Bridge

After the work platform is constructed, the existing bridge will be demolished using cranes and other heavy equipment. No blasting is required for demolition. The contractor will attempt to break the concrete bridge in as few pieces as possible and remove them from the site. The existing bridge is brittle and is likely to crumble in many places resulting in numerous fragments which will fall into the dewatered area. The abutments on both sides of the river will be entirely removed. Piers will be removed only to approximately two feet below the stream bed, thus leaving an unknown amount of concrete material below grade. Concrete debris will either be recycled as base material for the approaches or other roadway portions of the project or hauled off site (Burke and Treman 2001).

1.3.4. Construction of Bridge

The new bridge will be a two-span bridge with on instream pier and an abutment on each bank. All portions of the bridge will be constructed in the dry within the dewatered area. The bridge's substructure will be constructed by grading the riverbanks to a 2:1 (horizontal:vertical) slope, driving steel piles to support the substructure, pouring concrete footings, the center pier, abutment walls, and installing riprap blankets and bioengineering revetments around the abutments. 4,184 square feet of heavy loose riprap will be placed from the toe of the slope to the about ten horizontal feet of the bank to protect the scour critical areas (Adolfson Assoc. 2000a). Large woody debris (LWD) will be incorporated into the revetment on the north bank above the riprap. Other items incorporated into the revetment include filter blankets, epoxy coated steel reinforced bars, shrubs and trees, and native soil.

Once the new substructures are in place, pre-cast concrete girders will be installed on the new abutments. The girders will be positioned using one or two cranes. After the new girders are positioned, a new concrete bridge deck will be poured in place. Once the new girders are in place, road approaches will be widened from 18 feet to approximately 36 feet, the width of the new bridge (Adolfson Assoc. 2000a). New guardrails and Jersey barriers will also be installed.

1.3.5. Channel Modification

The channel is currently constricted immediately downstream of the existing bridge site. In addition to the lengthening bridge and reducing the number of piers in the river, Walla Walla County proposes to alleviate the constriction by excavating parts of the channel. They propose to widen 375 feet of the south side of the river channel by excavating the bank using cranes or other heavy machinery. Approximately 1,500 cubic yards of material will be removed during channel modification. The work will be performed during the dry season when the treated portion of the bank will not be in contact with the river.

1.3.6. Construction of Stormwater Facilities

Presently, there is no stormwater treatment provided for the existing roadway and bridge. The County proposes to construct a series of roadside swales designed to infiltrate all of the new and existing impervious surfaces within the action area. Both water quality and water quantity will be treated.

1.3.7. Removal and Planting of Vegetation

Riparian vegetation will be removed during construction of the bridge, roadway, stormwater facilities, and the channel modification. The total area affected by the proposed project will be approximately 0.54 acres. Ten deciduous trees near the south bank will be removed to facilitate the channel modification. Affected riparian areas will be replanted at a 3:1 ratio (trees replanted to trees removed) with native trees. The proposed planting will also add coniferous trees to the action area, which is currently devoid of conifers. All plantings described in the BA and mutually agreed upon in this BO shall survive after three years or will be replaced during that time frame. It is the responsibility of the action agency to ensure monitoring and replacement of trees as needed.

1.3.8. Wetland Impacts

Based on field estimates, it is anticipated that the proposed project will temporarily impact approximately 0.13 acres of riparian emergent and scrub-shrub wetland along the south bank downstream of the bridge to reconstruct the channel. The impacts will occur as a result of removing the levee and widening the river channel. Wetlands are not being filled; rather material is being removed along the river bank to create a larger quantity of regularly inundated riparian area. Impacts to wetlands will not result in long-term degradation of wetland habitat in the action area and the proposed channel modification will result in a lower gradient which will be inundated during high flow, creating 0.42 acres of emergent wetland habitat.

1.3.9. Phases of Construction

Construction is expected to take six months, from June 1 through December 31. In-water work will occur between July 15 and October 31. Staging and construction of a detour route will commence prior to July 15. On July 15 or later, the channel will be diverted into the culvert and the dewatered work area will be created. The bridge will then be removed and the foundations, abutments, and revetments on the banks will be installed. Prior to removing the water diversion and the culverts, the dewatered area will be cleared of all fill and foreign material and the stream bed will be regraded to its pre-construction condition. The diverted area will then be removed returning the river to its channel. The diverted flow must be returned to its natural flow by November 1 when adult MCR steelhead begin migrating through the action area. The channel modification will occur simultaneously with the bridge removal and installation. Work after October 31 will be limited to the installation of new beam guardrails, jersey barriers, replanting of the bank, and other out-of-water construction activities.

1.4. Description of the Action Area

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. [50 CFR §402.02]

The action area is defined as the river channel which includes the water, and land (including submerged land) from approximately 250 feet upstream of the existing Whitman Bridge to approximately 0.5 river miles below the Whitman Bridge. The action area also includes the adjacent riparian zone within the construction area and all areas affected by the project including the staging area, catch basins and swales.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1. Status of Species and Critical Habitat

Middle Columbia River steelhead trout were listed as threatened under the ESA on March 25, 1999 (64 Fed. Reg. 14517). Critical habitat for steelhead was designated on February 16, 2000 (65 Fed Reg. 7764). In Washington, the MCR steelhead ESU includes winter and summer steelhead in tributaries to the Columbia River above the Wind River upstream to include the Yakima River (Busby et al. 1996). Steelhead of the Snake River Basin are not included.

Six stocks of steelhead within the MCR ESU were identified as at risk of extinction or of special concern (Nehlsen et al. 1991). The Walla Walla River stock was identified as of special concern. There are several factors for decline of MCR steelhead including habitat degradation through grazing and water diversion, overharvest, predation, hydroelectric dams, hatchery introgression, drought and other natural or human-induced factors (Busby et al. 1996). Estimates of historical, pre-1960s abundance for the MCR ESU are available for the Yakima River only. The estimated pre-1960 run size is 100,000 (WDFW et al. 1993). If we assume that other basins had comparable run sizes for their drainage areas, the total historical run size for this ESU might have been in excess of 300,000. The most recent 5-year average run size (1989-1993) was 142,000 with a naturally produced component of 39,000. These data indicate approximately 74% hatchery run in the total run to this ESU (Busby et al. 1996). The current natural run size for the MCR ESU might be less than 15% of estimated historical levels.

Steelhead are still found throughout much of their historic range in the Walla Walla River basin, though populations have declined. Accurate historic estimates of steelhead returns to the Walla Walla River Basin do not exist, but the run size is believed to have been 4,000 to 5,000 fish (Oregon Department of Fish and Wildlife 1987), cited in Confederated Tribes of the Umatilla Indian Reservation *et al.* 1990). Long-term spawning ground surveys are not conducted on the Walla Walla River, so estimates are unavailable (WDFW et al. 1993). However, WDFW et al. (1993) identified the stock as depressed and Nehlson et al. 1991 identified it as of special concern.

Essential features of critical habitat for steelhead include adequate substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food, riparian vegetation, and safe passage conditions. Recent and historical information related to abundance and life history is summarized in Busby et al. (1996).

2.1.2. Evaluating the Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by 50 CFR Part 402. The NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of (1) defining the biological requirements of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributed to: (1) collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area. NMFS must identify reasonable and prudent alternatives for the action if it is determined that the action will adversely modify critical habitat.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS's jeopardy analysis considers direct or indirect mortality of fish attributable to the action. The NMFS critical habitat analysis considers the extent to which the proposed action impairs the function of essential habitat elements spawning, rearing, feeding, sheltering, or migration of MCR steelhead when viewed in relation to status of habitat throughout the ESU.

2.1.2.1. Biological Requirements

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

Biological requirements of freshwater habitat are defined as properly functioning condition (PFC) of essential habitat functions that are relevant to any steelhead life stage. These habitat conditions include all parameters of the matrix of pathways and indicators (MPI) described in NMFS (1996), e.g., water quality, habitat access, flow/hydrology, and riparian reserves.

Information related to biological requirements for MCR steelhead may be found in Busby et al. (1996). Presently, the biological requirements of listed species are not being met under the environmental baseline. To improve the status of the listed species, significant improvements in the environmental conditions of designated critical habitat are needed.

2.1.2.2. Environmental Baseline

The environmental baseline represents the current set of basal conditions to which the effects of the proposed action are then added. Environmental baseline is defined as "the past and present impacts of all Federal, State, and private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or informal section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process" (50 C.F.R 402.02). The term "action area" is defined as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action."

The proposed project is located in the Walla Walla watershed in Walla Walla County, Washington. The Walla Walla River is a tributary to the Columbia River system. The watershed drains an area of approximately 1,758 square miles with headwaters in the Blue Mountains and the Palouse hills within Washington and Oregon. The project area is located about 0.5 river miles downstream of the West Little Walla Walla River confluence at 33.4 RM. The project area provides a migration corridor for MCR steelhead for over half of the watershed including the north and south forks of the Walla Walla River and Mill Creek.

Kuttel (2001) defines the subbasin surrounding the action area as the Lower Walla Walla subbasin. The subbasin is dominated by agricultural land use with sporadic highly urbanized city centers such as the City of Walla Walla about six miles southeast of the project area. At present, the surface waters throughout the subbasin are characterized as: lacking large woody debris (LWD), generally narrow riparian zones, low summer stream flows exacerbated by surface water withdrawals, high water temperatures, heavily silted with fine sediments, and many stream reaches have been altered by diking and/or channelization (Kuttel 2001).

Agricultural lands comprise 58% of the watershed, while forest land and range land cover 25% and 17% respectively (U.S. Army Corps of Engineers 1997). Management of agricultural lands has seriously degraded salmonid habitat in many areas of the watershed. Practices such as farming to the edge of streams, removing riparian vegetation, filling off-channel areas, diking and channelization, allowing livestock full access to streams, conversion of native perennial vegetation to annual crops, and irrigation have all played roles in habitat degradation (Bureau of Reclamation 1997; U.S. Army Corps of Engineers 1997; Mendel *et al.* 1999; Saul *et al.* 2000). Water diversions and withdrawals appear to be the major limiting factor throughout the subbasin leading to low stream flows and fish kills. The Washington Department of Fish and Wildlife (WDFW) estimates that less than 10% of surface water diversions in the Washington portion of the basin meet state or federal juvenile fish screening criteria (Kuttel 2001). Bireley (2000) reported that over 75% of the diversions identified in the Cooperative Compliance Review

Program (CCRP) are located in streams utilized for salmonid spawning, rearing and migration. The high incidence of non-compliant surface water diversions is a serious threat to federally listed juvenile salmonids. Furthermore, it is likely that the diversions identified in the CCRP may represent only 50% to 60% of surface water diversions currently in use in the Washington portion of the basin.

2.1.2.3. Status of the Species within the Action Area

Currently steelhead are the only anadromous salmonid that spawn in the Walla Walla River system (CTUIR 1996; in Columbia River Inter-Tribal Fish Commission 2001). Accurate historic estimates of steelhead returns to the Walla Walla River Basin do not exist, but the run size is believed to have been 4,000 to 5,000 fish (Oregon Department of Fish and Wildlife 1987), cited in Kuttel 2001). Presently steelhead are found in the Walla Walla River including the North and South Forks and several of their tributaries, Mill Creek and several of its tributaries, Dry Creek, and the Touchet River including the North and South Forks, Wolf Fork, Robinson Fork, Spangler Creek, Lewis Creek, Jim Creek, Patit Creek, and Coppei Creek (Germond, J. 2000b Personal Communication; Mendel, G. 2000 Personal Communication; Northrop, M. 2000 Personal Communication; Volkman, J. 2000 Personal Communication), cited in Kuttel 2001).

The area immediately above and below the project provides rearing habitat and is a migratory corridor for steelhead that spawn upstream from the project site. The Washington Department of Fish and Wildlife (WDFW) plants marked hatchery steelhead in the Touchet River at Dayton and the Walla Walla River below Mill Creek to provide sportfishing opportunities (Mendel, G. 2001 Personal Communication), in Kuttel 2001). There is no direct commercial fishery on this stock although incidental catch of wild steelhead occur in the Columbia River. The Cayuse, Walla Walla, and Umatillas, collectively are known as the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) may also harvest this stock at unknown numbers.

Steelhead begin entering the Walla Walla system as early as September or October, but if necessary they will hold for long periods of time until conditions are favorable for migration (Bjornn and Reiser 1991). Peak adult migration occurs in early November but migration timing may vary from year to year depending on weather or flow conditions. Most of the spawning in the Walla Walla River system occurs near the headwaters where there is adequate riparian vegetation, cold water temperatures, and clean gravel. The action area currently does not provide these functions and spawning has not been documented in the action area. ODFW and WDFW monitor spawner escapement for the Walla Walla stock but estimates are imprecise due to partial sampling. Nonetheless, the steelhead stock in the Walla Walla is classified as depressed (WDFW 1992). CTUIR (1990) set an objective for a return of 11,000 of which 3,000 would be naturally produced and 7,680 would be for harvest. Steelhead eggs may incubate for 1.5 to 4 months before hatching depending on water temperature (61 Fed. Reg. 41542; August 9, 1996). Bjornn and Reiser (1991) noted that steelhead eggs incubate about 85 days at 4˚C and 26 days at 12˚C to reach 50% hatch. Nickelson et al. (1992) stated that steelhead eggs hatch in 35 to 50 days depending upon water temperature.

All steelhead within the Walla Walla stock with the exception of those in the Touchet River, Mud Creek and Dry Creek systems migrate through the action area.

Several scour pools exist throughout the project area including one large pool on the north bank created by a wood jam on the piers of the existing bridge. These pools likely provide rearing habitat for juvenile salmonids. Electrofishing and snorkel surveys by WDFW in August and September of 1998 and 1999 document the use of the action area by sub-yearling and juvenile steelhead (Adolfson Assoc 2000b, NMFS 2000). Based on these data, steelhead rear within the action area during the proposed in-water construction window, albeit at low levels.

2.1.2.4. Factors Affecting Species in the Action Area

The action area is surrounded by agricultural land. This has been the case throughout the Lower Walla Walla subbasin since the early 1800's. Baseline conditions in the Walla Walla basin are degraded and in the action area, none of the habitat indicators are properly functioning. The three most limiting factors are water quantity, water quality, and habitat conditions (NMFS 2000).

Legal and illegal water withdrawals for irrigation have significantly reduced water quantity in the river and its tributaries. The stream channel within the action area, along with many other parts of the river is characterized by a lack of off-channel habitat, few wetlands, and stream flow regimes with high winter peaks and low summer flows (and associated high temperatures). The Burlingame Diversion Dam is located approximately 3 RM upstream of the action area. The Burlingame Diversion diverts a majority of the Walla Walla River for irrigation in the spring and early summer. Discharge rates can change significantly on a daily basis as is expected for systems with extensive irrigation withdrawals. In 1999, the lowest flow at the bridge was approximately 5.3 cubic feet per second (cfs). The 1999 data does not show the winter period. During August and September 1999 flows ranged between about 9.5 and 29.5 cfs. In 1998, the WDFW monitored a temperature at this location. Flows were spot-checked monthly and ranged from 46 cfs during the winter and spring to approximately, 10 cfs from July through September (WDFW, unpublished data; Adolfson Assoc. 2000a).

Some sections in the Walla Walla River within the action area downstream of Whitman Bridge have been designated as water quality limited under Section 303(d) of the Clean Water Act because of temperature and pollution. Reduced riparian cover, irrigation withdrawals, and runoff are likely to be contributors to water quality degradation within the basin (ACOE 1997). Other conditions such as development and agricultural runoff also contribute to water quality problems (ACOE 1997). No water temperature measurements have been conducted at the Whitman Bridge location; however WDFW provided preliminary temperatures at the Kennedy Memorial Bridge only three miles upstream. Maximum water temperatures at the Kennedy Memorial Bridge in 1998 and 1999 topped 70 degrees Fahrenheit (21ºC) and 80 degrees F (27ºC) (and higher) temperatures are not uncommon. Average instream temperatures are highest in the late July. In 1998, daily average instream temperatures at Kennedy Memorial Bridge were over 70º F every day between July 15 and July 31 (Adolfson Assoc. 2000b; NMFS 2000).

The river banks in the action area are steep and unstable and support only isolated, narrow strips of riparian vegetation. Streambank conditions and floodplain connectivity in the action area are degraded by bank armoring, levees, channelization, and other flood control measures. Agricultural practices have impacted riparian buffers. Buffer widths are narrow and vegetation is mostly immature. The abundance of LWD is extremely low and recruitment of LWD is poor. Roads, urban and rural development, and agricultural land uses have altered channel dynamics and hydrology in the basin (NMFS 2000). Substrates in the action area are dominated by large gravel with some cobbles. They are impacted by sand and silt deposits (Adolfson Assoc. 2000b; John Dirr, pers comm in NMFS 2000).

2.1.2.5. Factors Affecting the Species at the Population Level

To conduct jeopardy analyses in recent Biological Opinions, NMFS assessed life history, habitat and hydrology, hatchery influence, and population trends in analyzing the effects of the underlying action on affected species at the population scale (see, for example, Reinitiation of Consultation on Operation of the Federal Columbia River Power System, Including the Juvenile Fish Transportation Program, and 19 Bureau of Reclamation Projects in the Columbia Basin. NMFS 2000.) A thumbnail description of each of these factors is provided below.

<u>Life History</u>

Most fish in this ESU smolt at 2 years and spend 1 to 2 years in salt water before reentering freshwater, where they may remain up to a year before spawning (Howell et al. 1985). All steelhead upstream of the Dalles Dam are summer-run (Schreck et al. 1986, Reisenbichler et al. 1992, Chapman et al. 1994). The Klickitat River, however, produces both summer and winter steelhead, and age-2-ocean steelhead dominate the summer steelhead, whereas most other rivers in the region produce about equal numbers of both age-1- and 2-ocean fish. A non-anadromous form co-occurs with the anadromous form in this ESU; information suggests that the two forms may not be isolated reproductively, except where barriers are involved.

<u>Habitat and Hydrology</u>

The only substantial habitat blockage now present in this ESU is at Pelton Dam on the Deschutes River, but minor blockages occur throughout the region. Water withdrawals and overgrazing have seriously reduced summer flows in the principal summer steelhead spawning and rearing tributaries of the Deschutes River. This is significant because high summer and low winter temperatures are limiting factors for salmonids in many streams in this region (Bottom et al. 1985).

<u>Hatchery Influence</u>

Continued increases in the proportion of stray steelhead in the Deschutes River basin is a major concern. The ODFW and the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO) estimate that 60% to 80% of the naturally spawning population consists of strays, which greatly outnumber naturally produced fish. Although the reproductive success of stray fish has not been evaluated, their numbers are so high that major genetic and ecological effects on natural populations are possible (Busby et al. 1999).

The negative effects of any interbreeding between stray and native steelhead will be exacerbated if the stray steelhead originated in geographically distant river basins, especially if the river basins are in different ESUs. The populations of steelhead in the Deschutes River basin include the following:

- Steelhead native to the Deschutes River
- Hatchery steelhead from the Round Butte Hatchery on the Deschutes River
- Wild steelhead strays from other rivers in the Columbia River basin
- Hatchery steelhead strays from other Columbia River basin streams

Regarding the latter, CTWSRO reports preliminary findings from a tagging study by T. Bjornn and M. Jepson (University of Idaho) and NMFS suggesting that a large fraction of the steelhead passing through Columbia River dams (e.g., John Day and Lower Granite dams) have entered the Deschutes River and then returned to the mainstem Columbia River. A key unresolved question about the large number of strays in the Deschutes basin is how many stray fish remain in the basin and spawn naturally.

Population Trends and Risks

For the MCR steelhead ESU as a whole, NMFS estimates that the median population growth rate (lambda) over the base period ranges from 0.88 to 0.75, decreasing as the effectiveness of hatchery fish spawning in the wild increases compared to that of fish of wild origin (McClure et al. 2001). NMFS has also estimated the risk of absolute extinction for four of the spawning aggregations, using the same range of assumptions about the relative effectiveness of hatchery fish. At the low end, assuming that hatchery fish spawning in the wild have not reproduced (i.e., hatchery effectiveness = 0), the risk of absolute extinction within 100 years ranges from zero for the Yakima River summer run to 1.00 for the Umatilla River and Deschutes River summer runs (McClure et al. 2001). Assuming that the hatchery fish spawning in the wild have been as productive as wild-origin fish (hatchery effectiveness = 100%), the risk of absolute extinction within 100 years ranges from zero for the Yakima River summer run to 1.00 for the Deschutes River summer run (McClure et al. 2001).

2.1.3. Effects of the Proposed Action

The proposed replacement of the Whitman Bridge is likely to adversely affect MCR steelhead as determined by the FHWA. The portions of Walla Walla River that flow through the action area may support rearing areas for juvenile steelhead. The action area is within designated critical habitat for MCR steelhead.

The ESA implementing regulations define "effects of the action" as "the direct and indirect effects of an action on the species or critical habitat together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline." Indirect effects are those that are caused by the proposed action, are later in time, but are still reasonably certain to occur (50 C.F.R 402.02).

2.1.3.1. Direct Effects

Direct effects are the immediate effects of the project on the species or its habitat. Direct effects result from the agency action and include the effects of interrelated actions and interdependent actions. Future Federal actions that are not a direct effect of the action under consideration (and not included in the environmental baseline or treated as indirect effects) are not evaluated.

Juvenile and adult steelhead may inhabit the action area during the proposed construction periods. Generally, the direct effects are related to the extent and duration (14 to 15 weeks) of construction activities in or adjacent to Walla Walla River. The negative effects associated with the proposed project are likely to be short in duration and have been minimized through restrictions in timing of construction.

Diversion of Stream and Removal of Fish

The diversion of the river during construction may result in the stranding of juvenile steelhead. Additionally, the diversion of water in the channel will impede movements of steelhead, preventing access to the dewatered area for 14 to 15 weeks. The effects associated with dewatering are expected to be reduced through the use of sequential dewatering that will enable fish to move with the receding water. The temporary culverts will also be large enough and fitted to ensure fish passage during construction. The effects associated with dewatering will also be minimized by timing. During the work window, adult steelhead migration and spawning has been completed and outmigrating smolts are expected to have emigrated.

Diverting water will also cause the temporary loss (burial, dessication, and displacement) of macro invertebrate habitat. Aquatic invertebrates serve as an important source of prey for salmonids, and the loss of aquatic invertebrate habitat may reduce foraging opportunities for listed salmonids. Effects associated with the disruption of the streambed is likely to be short-lived as new invertebrates tend to recolonize disturbed areas (Allan 1995).

Electrofishing may result in direct mortality of young-of-the-year or juvenile steelhead. Physical injuries from electrofishing include internal hemorrhaging, spinal misalignment, or fracture of vertebrae. The likelihood of injury or mortality will be reduced by using a qualified WDFW biologist that ensures safe capture, handling, and release of fish.

Water Quality

The expected negative effects associated with grading, excavation, the installation of dewatering barriers, culverts, and the back-filling and removal of the construction area include temporary increases in turbidity and sediment levels during construction. Short term negative effects include: deposition of fine sediment that may significantly degrade instream spawning habitat and reduce survival of steelhead from egg to emergence (Phillips et al. 1975), sublethal effects from suspended sediments (e.g., elevated blood sugars and cough rates (Servizi and Martens 1992), physiological stress and reduced growth, loss of intergravel cover for fish from increased sediment levels (Spence et al. 1996), avoidance of suspended sediments by juvenile salmonids (Bisson and Bilby 1982; Servizi and Martens 1992), and elevated turbidity levels that can reduce the ability of salmonids to detect prey and may cause gill damage (Sigler 1980; Lloyd et al. 1987). Moderate turbidity levels (11 to 49 NTU's) also may cause juvenile steelhead and coho to leave rearing areas (Sigler et al. 1984). Additionally, short-term pulses of suspended sediment have been shown to influence territorial, gill-flaring, and feeding behavior of salmon under laboratory conditions (Berg and Northcote 1985). These negative effects will be minimized through recommended restrictions in timing of construction and the use of erosion control measures identified in the BA, and terms and conditions of this BO. It is expected that listed species present during construction will seek refugia or will avoid portions of stream with high turbidity and sediment levels. Overall, the increased turbidity and sediment are not expected to influence the environmental baseline over the long term.

Disturbance of Riverbed

Excavation, removal of the existing bridge, placement of dewatering barriers, channel modification, removal of construction area, and back-filling will disturb the substrate of Walla Walla River. It is unlikely that the instream work will affect spawning habitat although instream work may harm fish by homogenizing the substrate and reducing the diversity of benthic habitat in the river bed. Additionally, the use of heavy equipment in the riparian areas and within the streambed may cause compaction of soils resulting in reduced infiltration at the project site. Such compacting decreases the stability of the banks, reduces recruitment of riparian vegetation, which results increases deposition of fine sediments into the river. To minimize the disturbance of riverbed, the contractor will stay within the dammed work area and designated access routes.

Removal of Riparian Vegetation

Riparian vegetation links terrestrial and aquatic ecosystems, influences channel processes, contributes organic debris to streams, stabilizes streambanks, and modifies water temperatures (Gregory et al. 1991). Removal of vegetation may result in increased water temperatures that would further degrade already impaired water temperatures in the action area. Elevated water temperatures may influence numerous attributes of salmonids including physiology, growth and development, life history patterns, disease, and competitive predator-prey interactions (Spence et al. 1996). Loss of vegetation also may reduce allochthonous inputs to the stream. Woody debris provides essential functions in streams including the formation of habitats. Additionally, the removal of vegetation decreases streambank stability and resistance to erosion.

Like most of the Lower Walla Walla subbasin, the action area exhibits poor riparian conditions (Kuttel 2001). The removal of existing trees may have a dramatic effect on the action area which already lacks properly functioning riparian forest. Replanting disturbed areas will contribute to improve function in the action area. Nevertheless, there will be a temporal loss of functions provided by the riparian vegetation being removed from the time they are removed until the planted saplings grow to the age and size of the vegetation being removed. The widening of the roads, lengthening of the culverts, and other added impervious surface will create a permanent loss of riparian habitat and will permanently preclude revegetation.

Wetland Impacts

The proposed project will affect 0.13 acres of riparian emergent and scrub-shrub wetland along the south bank downstream of the bridge (Adolfson Assoc. 2000a). The wetland impacts are a result of the removal of the levee and widening the river channel and are not expected to result in a long-term degradation to the action area. The wetlands are not being filled, rather material is being removed along the riverbank to create a larger quantity of regularly inundated riparian area (Adolfson Assoc. 2000a). The proposed channel modification will create 0.42 acres of low bench stream habitat that will be inundated more regularly.

2.1.3.2. Indirect Effects

Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Indirect effects may occur outside of the area directly affected by the action. Indirect effects may include other Federal actions that have not undergone section 7 consultation but will result from the action under consideration. These actions must be reasonably certain to occur, or they are a logical extension of the proposed action.

Impervious Surface and Stormwater Facilities

The addition of impervious surface may result in increased stormwater runoff and alteration of existing drainage patterns in the action area. Specifically, impacts to hydrology may include increased frequency and duration of peak flows and the presence of peak flows during periods when none previously existed. Increased impervious area also may shift the hydrologic regime from subsurface to surface runoff and may result in higher and more frequent peak flows even with small storms. Increased peak flows and increased frequency and duration of peak flows can adversely alter steelhead habitat through lateral erosion, bed scour, downcutting, creating steep and unstable banks that are highly erosive, and removal of woody debris. In addition, increasing peak flows reduces the amount of precipitation from recharging groundwater aquifers which in turn decreases base flows. Decreased base flow, especially during the summer and during low flow conditions, may create migration barriers, create pools that may strand fish, and increases stream temperatures.

Research indicates a negative relationship between impervious cover and surface water quality associated with stormwater runoff (Schueler 1984). In urban areas, roads act as conduits of runoff water and pollutants from impervious areas directly to streams. May et al. (1997) discussed declines in biological integrity and habitat quantity and quality as the level of impervious surface area increased above 5%. Large rain storms and subsequent high flows can elevate total suspended solids, turbidity, and nutrient concentrations in urban watersheds. Additionally, chemical water quality generally declines as urbanization increases (May et al.

1997). Increased impervious surface also contributes to water temperature increases in streams (Schueler 1984). Furthermore, the addition of impervious surface to the watershed, including riparian areas, will result in a permanent loss of opportunity for revegetation in the watershed. Large open spaces resulting from agricultural development and large riparian areas devoid of large trees dominate the Lower Walla Walla subbasin.

Although there are some city centers with high density road networks, most of the subbasin has a few roads and low density road networks. The road project will create 7,830 square feet of new impervious surface in the Lower Walla Walla River basin but will not add lanes to the road and does not increase the road network in the action area.

The proposed project includes stormwater treatment facilities designed to infiltrate all of the stormwater generated from the road improvement project. Infiltrating all stormwater preserves the hydrology of the system and is the preferred method for treating stormwater and protecting steelhead habitat.

Changes in Fluvial Transport and Channel Morphology

The replacement of the existing six-span bridge with a longer, two-span bridge will increase the fluvial transport of sediment and large woody debris, which is important in the formation of diverse habitats. The proposed channel modification is designed to relieve a hydraulic constriction immediately downstream of the Whitman Bridge. This will reduce the likelihood and the extent of catastrophic damage to aquatic habitat by lowering erosive velocities during peak floods. This channel modification will also restore the river channel to a more natural configuration and velocity. The channel modification will also improve floodplain connectivity by breaching an existing levee. The effects described above are considered to be beneficial to listed salmonids and critical habitat.

The use of riprap (or quarry spawls or rocks) may cause significant modifications of the stream channel. Riprap prohibits lateral movement in the channel, thereby reducing undercut banks, natural meanders and creation of side channels and off-channel habitat (Schmetterling et al. 2000). Riprap has been shown to incise stream reaches causing a series of morphological changes: floodplain abandonment, bank steepening and erosion, lowering of water table, changes in stream bank vegetation and change in stream substrate (Beschta and Platts 1986; Heede 1986 in Schmetterling et al. 2000). As a result, habitat diversity in the stream channel is severely reduced. Riprapping has been shown to reduce riparian vegetation along the banks which leads to the reduction in LWD recruitment (Ralph et al. 1994; Young et al. 1994; Fausch et al. 1995 in Schmetterling et al. 2001). Li et al. (1984) found lower sub-yearling and juvenile salmonid densities because of adverse microhabitat conditions created by large angular rock. Numerous studies have shown lower densities in juvenile salmonids in riprapped banks (Beamer and Henderson 1998; Peters et al. 1998; Knudsen and Dilley 1987; Thurow 1988). Walla Walla County estimates that 4,184 square feet of riprap will be placed along the abutments. Riprap is being removed from adjacent banks for the construction of this bridge and for the channel modification. The proposed action will not significantly increase the amount of riprap to the system.

2.1.3.3. Population Level Effects

Under the environmental baseline, life history diversity has been limited by the influence of hatchery fish, by physical barriers that prevent migration to historical spawning or rearing areas, and by water temperature barriers that influence the timing of emergence, juvenile growth rates, or the timing of upstream or downstream migration. The reconstruction of the existing Whitman Bridge is expected to add temporary, construction related effects to the existing environmental baseline. In addition to these effects, the project includes measures that will minimize direct effects as well as increasing the quality of some existing functions in the action area. These effects, detailed above, are not expected to have any significance at the population level. Therefore, the Services believe the proposed action does not contain measures that are likely to adversely affect the population trends, habitat and hydrology, life-history diversity, or the influence of hatcheries on the ESU compared to conditions under the environmental baseline.

2.1.3.4. Effects on Critical Habitat

The proposed actions will affect essential features of the MCR steelhead critical habitat. The NMFS designates critical habitat based on physical and biological features that are essential to each listed species. Essential features of designated critical habitat include stream substrate, water quality, water quantity, water temperature, water velocity, food, riparian vegetation, access, and safe passage conditions for fish. The proposed construction activities will affect water quality, water quantity, water velocity, water temperature, wetland impacts, and riparian vegetation. None of the effects on critical habitat are expected to be long term.

All construction activities involving the bank, stream bed, and water column may create short-term increases in turbidity. Noticeable turbidity plumes are only expected during and shortly after major in-water construction activities. These activities include but are not limited to installation and removal of the barriers and construction area, and channel modification. Increased turbidity is not expected to be long-term.

The increase of 7,830 square feet of impervious surface in the action area is a nominal increase in road network density and will not contribute to the degradation of peak flow and base flow conditions because of the stormwater treatment proposed for the project. Increasing impervious surface also precludes reforestation in those newly paved areas. Additionally, the widening of the bridge will increase the amount of overwater structure on the Walla Walla River. However, the structure is higher and has fewer piers than the existing bridge and will not significantly effect the river than the existing bridge.

The wetland effects associated with this project result from purposeful expansion of the low bench. The wetland impacts are a short-term loss of 0.13 acres. The effects of this loss will be offset after the levee is breached and the bench is widened; 0.42 acres of wetland will be created.

The temporal loss of riparian vegetation further contributes to the degradation of the already degraded condition of riparian vegetation in the Walla Walla system. Replanting disturbed areas with conifers and other native trees and shrubs will improve the condition of the riparian habitat in the long-term reducing, if not avoiding, the effects of the project. The proposed monitoring and maintenance for these replantings ensure long-term restoration of the disturbed riparian vegetation.

The short-term negative effects on water quality and macro invertebrate communities will not have lasting effects. Long-term beneficial effects on critical habitat from the proposed action includes the removal of five piers from the stream channel and the removal of channel constriction. Replacing the old bridge with a longer two-span bridge would allow restoration of currently constricted flow.

2.1.4. Cumulative Effects

Cumulative effects are defined as "those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 C.F.R 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA

In the action area for this project, agricultural activities are the main land use. Riparian buffers are not properly functioning and have little woody vegetation. Agricultural practices leave little stream buffer width. The NMFS does not expect any further habitat degradation from agricultural practices. NMFS assumes that non-Federal land owners in those areas will also take steps to minimize or avoid land management practices that would result in the take of those species. Such actions are prohibited by section 9 of the ESA, and subject to the incidental take permitting process under section 10 of the ESA.

2.1.5. Conclusion

The proposed actions are not likely to jeopardize the continued existence of MCR steelhead or result in the destruction or adverse modification of their designated critical habitat. The determination of no jeopardy was based on the following: 1) timing restrictions related to in-water construction are expected to minimize impacts to fish and their habitat, 2) riparian vegetation removal will be replanted at a 3:1 ratio, 3) replacement of a longer bridge with fewer piers within the river channel should improve passage conditions for all life stages of salmonids and improve channel morphology, and 4) the installation of stormwater facilities will minimize the effects of increased impervious surface added to the Walla Walla watershed.

There will be short-term direct impacts associated with the proposed activities. The diversion of water, removal of fish from dewatered areas, the shortening of the river channel, and increased sediment levels will result in displacement of fish in Walla Walla River. The direct and indirect effects will be minimized through the use of Best Management Practices in the design and construction. The bridge replacement will increase the amount of overwater structure above the Walla Walla River. However, unlike other overwater structures, the bridge is high above mean high water and is therefore not considered a limiting factor on habitat function the Walla Walla River, at the site. For these reasons, NMFS concludes that the proposed action includes no activities that are likely to adversely affect the species at the population level. Therefore, the proposed action will not appreciably reduce the likelihood of survival and recovery of MCR steelhead.

2.1.6. Reinitiation of Consultation

Consultation must be reinitiated if the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R § 402.16).

2.2. Incidental Take Statement

Section 9 of the ESA and Federal regulation pursuant to section 4 (d) of the Act prohibit the take of endangered and threatened species without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined as "significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering" (50 CFR 222.102). Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the effects of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize take and sets forth terms and conditions with which the action agency must comply to implement the reasonable and prudent measures.

2.2.1. Amount or Extent of Take

The NMFS anticipates that the proposed action is reasonably certain to result in incidental take through harm and harassment of juvenile and adult steelhead. The exact numerical amount of expected take is difficult to determine, and therefore has not been quantified. Instead, the extent of effects on habitat in the action area have been analyzed and Reasonable and Prudent Measures have been developed to address those effects.

2.2.2. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of MCR steelhead:

1. The FHWA shall minimize take by limiting in-water construction to the time period between July 15 and October 31.

2. The FHWA shall minimize take during the dewatering and in-water work.

3. The FHWA shall minimize take that might arise from the diversion of the river.

4. The FHWA shall minimize take by taking affirmative steps to avoid or minimize erosion and sediment delivery to water.

5. The FHWA shall minimize take that might arise from vegetation removal.

6. The FHWA shall minimize take that might arise from wetland impacts.

7. The FHWA shall minimize take that might arise from added impervious surface.

2.2.3. Terms and Conditions

To comply with ESA section 7 and be exempt from the prohibitions of ESA section 9, the FHWA must comply with the terms and conditions that implement the reasonable and prudent measures. There terms and conditions are non-discretionary.

1. To implement RPM #1 above, the FHWA shall ensure that in-water construction will be limited to July 15 through October 31 and the applicant acquire a Hydraulic Project Approval (HPA) from WDFW. Those provisions are incorporated here by reference, as a Term and Condition of this Incidental Take Statement.

2. To implement RPM #2 above, the FHWA shall comply with protective measures identified in the BA, the HPA, and this BO during in-water construction will acquire the assistance of a fish biologist during dewatering to release fish.

3. To implement RPM #3 above, the terms and conditions of the Hydraulic Project Approval and any other provisions outlined by WDFW biologists shall be followed regarding the size and installation of the temporary culverts. Those provisions are incorporated here by reference, as a Term and Condition of this Incidental Take Statement.

4. To implement RPM #4 above, the FHWA shall ensure that sediment controls are implemented and that conservation measures proposed by the applicant shall be fully implemented at the appropriate phase of construction. Those conservation measures are more fully described in the BA and associated correspondence, summarized in this BO, and are incorporated here by reference, as a Term and Condition of this Incidental Take Statement.

5. To implement RPM #5 above, the FHWA shall ensure that the applicant implements the monitoring measures for riparian revegetation described in this document and the BA. The monitoring measures described in those provisions are incorporated here by reference, as a Term and Condition of this Incidental Take Statement.

6. To implement RPM #6 above, the FHWA shall ensure that the applicant implements the mitigative measures for wetlands described in the BA and this BO. The mitigative measures described in those provisions are incorporated here by reference, as a Term and Condition of this Incidental Take Statement.

7. To implement RPM #7 above, the FHWA shall ensure the installation of stormwater facilities outlined in the BA and this BO are fully implemented. Furthermore, stormwater facilities shall undergo regular and extensive maintenance measures as described in this BO. Those provisions as summarized in this BO are incorporated here by reference as a Term and Condition of this Incidental Take Statement. Walla Walla County shall be responsible for maintenance and monitoring of the infiltration systems after the facilities have been in operation for two years.

8. The FHWA shall send monitoring reports to document take during in-water construction (i.e., water diversion, culvert replacement, placement of rock weirs), following the format attached in Appendix I. The reports shall be submitted monthly beginning when the initial in-water construction activities commence until in-water construction activities cease. The reports shall be sent to National Marine Fisheries Service, 510 Desmond Drive SE, Suite 103, Lacey, WA 98503. Although fish kills are not expected to occur and are not authorized by this incidental take statement, all salmonid carcasses caused by the action shall be collected and delivered to NMFS to be identified at FHWA's expense. The report and identification is critical in determining the extent of harm or kill by fish passage projects such as these and determining species occurrence in the action area. This provision is incorporated here by reference as a Term and Condition of this Incidental Take Statement.

3. MAGNUSON-STEVENS FISHERY CONSERVATION MANAGEMENT ACT

3.1. Background

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§305(b)(2));
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH (§305(b)(4)(A));
- Federal agencies must provide a detailed response in writing to NMFS within 30 days

after receiving EFH conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.110). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NMFS is required regarding any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2. Identification of EFH

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of federally-managed Pacific salmon: chinook (*Oncorhynchus tshawytscha*)(PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based, in part, on this information.

3.3. Proposed Actions

The proposed action and action area are detailed above in Section I. The action area includes habitats that have been designated as EFH for various life-history stages of chinook.

3.4. Effects of Proposed Actions

As described in detail in Section IV of this BO, the proposed action may result in detrimental short- and long-term impacts to a variety of habitat parameters. These adverse effects are:

1. Short term degradation of habitat due to dewatering of 8,250 square feet of the wetted channel and diversion of river.

2. Short term degradation of water quality in the action area due to an increase in turbidity during in water construction.

3. Short term degradation of habitat due to removal of riparian trees and vegetation.

4. Short term degradation of habitat due to wetland impact.

5. Long term change in fluvial morphology due to replacement of bridge, placement of riprap, and channel modification.

3.5. Conclusion

NMFS believes that the proposed actions may adversely affect EFH for chinook salmon.

3.6. EFH Conservation Recommendations

Pursuant to Section 305(b)(4)(A) of the MSA, NMFS is required to provide EFH conservation recommendations to Federal agencies regarding actions which may adversely affect EFH. While NMFS understands that the conservation measures described in the BO will be implemented by the Federal Highway Administration, it does not believe that these measures are sufficient to address the adverse impacts to EFH described above. However, many of the Terms and Conditions outlined in Section VIII are generally applicable to designated EFH for Pacific salmon and address these adverse effects. Consequently, NMFS recommends that Terms and Conditions #1 - #7 be adopted as EFH conservation measures. If implemented by the FHWA, these measures will minimize the potential adverse impacts of the proposed project described above and conserve EFH.

3.7. Statutory Response Requirement

Pursuant to the MSA (§305(b)(4)(B)) and 50 CFR 600.920(j), Federal agencies are required to provide a detailed written response to NMFS' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8. Supplemental Consultation

The Federal Highway Administration must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600.920(k)).

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APPENDIX I
In-Water Construction Monitoring Report

In-Water Construction Monitoring Report
Whitman Bridge Replacement (NMFS WSB-01-003)

Start Date: ________________
End Date: ________________

Waterway: Walla Walla River

Construction Activities:
____
____
____
____
____
____

Number of fish observed: ____________
Number of salmonid juveniles observed (what kind?): ____________________________________
Number of salmonid adults observed (what kind?):_______________________________________

What were fish observed doing prior to construction?____________________________________
____
____

What did the fish do during and after construction? _____________________________________
____
____
____
____

Number of fish stranded as a result of this activity: ___________

How long were the fish stranded before captured and released to flowing water?
____
____
____

Number of fish were killed during this activity: ___________

Send report to: National Marine Fisheries Service, Washington State Habitat Branch (WSB-00-148), 510 Desmond Drive SE, Suite 103, Lacey, Washington 98503